## SEQUENCE LISTING

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Z	THE	<b>'</b> \
(ē1	100%	E)
(A)	1/25/	MET
	PRADE	

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(1) GENERAL INFORMATION:

(i) APPLICANT: Carter, Paul J. Presta, Leonard G.

(ii) TITLE OF INVENTION: Immunoglobulin Variants

10 (iii) NUMBER OF SEQUENCES: 10

(iv) CORRESPONDENCE ADDRESS:

- (A) ADDRESSEE: Genentech, Inc.
- (B) STREET: 460 Point San Bruno Blvd
- (C) CITY: South San Francisco
- (D) STATE: California
- (E) COUNTRY: USA
- (F) ZIP: 94080

20 (v) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: 5.25 inch, 360 Kb floppy disk
- (B) COMPUTER: IBM PC compatible
- (C) OPERATING SYSTEM: PC-DOS/MS-DOS
- (D) SOFTWARE: patin (Genentech)

(vi) CURRENT APPLICATION DATA:

- (A) APPLICATION NUMBER: 07/715,272
- (B) FILING DATE: 14-June-1991
- (C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

- (A) APPLICATION NUMBER:
- (B) FILING DATE:

(viii) ATTORNEY/AGENT INFORMATION:

- (A) NAME: Adler, Carolyn R.
- (B) REGISTRATION NUMBER: 32,324
- (C) REFERENCE/DOCKET NUMBER: 709

(ix) TELECOMMUNICATION INFORMATION:

- (A) TELEPHONE: 415/266-2614
- (B) TELEFAX: 415/952-9881
- (C) TELEX: 910/371-7168

45 (2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 109 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val 1 5 10 15

Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Val Asn 20 25 30

Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
35 40 45

Leu Leu Ile Tyr Ser Ala Ser Phe Leu Glu Ser Gly Val Pro Ser
50 55 60

	Arg	Phe	Ser	Gly	Ser 65	Arg	Ser	Gly	Thr	Asp 70	Phe	Thr	Leu	Thr	Ile 75
5	Ser	Ser	Leu	Gln	Pro 80	Glu	Asp	Phe	Ala	Thr 85	Tyr	Tyr	Сув	Gln	Gln 90
	His	Tyr	Thr	Thr	Pro 95	Pro	Thr	Phe	Gly	Gln 100	Gly	Thr	Lys	Val	Glu 105
10	Ile	Lys	Arg	Thr 109											
	(2)	INFO	RMAT:	ION 1	FOR S	SEQ :	D NO	0:2:							
15		(1	A) L1 B) T	NCE ( ENGTI YPE: OPOL(	H: 13	20 ar	nino cid		ds						•
20	(x	i) S	EQUE	NCE I	DESCI	RIPT	ON:	SEQ	ID I	NO: 2	:				
	Glu 1	Val	Gln	Leu	Val 5	Glu	Ser	Gly	Gly	Gly 10	Leu	Val	Gln	Pro	Gly 15
25	Gly	Ser	Leu	Arg	Leu 20	Ser	Сув	Ala	Ala	Ser 25	Gly	Phe	Asn	Ile	Lys 30
30	Asp	Thr	Tyr	Ile	His 35	Trp	Val	Arg	Gln	Ala 40	Pro	Gly	Lys	Gly	Leu 45
	Glu	Trp	Val	Ala	Arg 50	Ile	Tyr	Pro	Thr	Asn 55	Gly	Tyr	Thr	Arg	Tyr 60
35	Ala	Asp	Ser	Val	Lys 65	Gly	Arg	Phe	Thr	Ile 70	Ser	Ala	Asp	Thr	Ser 75
	Lys	Asn	Thr	Ala	Tyr 80	Leu	Gln	Met	Asn	Ser 85	Leu	Arg	Ala	Glu	Asp 90
40	Thr	Ala	Val	Tyr	Tyr 95	Сув	Ser	Arg	Trp	Gly 100	Gly	Asp	Gly	Phe	Tyr 105
45	Ala	Met	Asp	Val	Trp 110	Gly	Gln	Gly	Thr	Leu 115	Val	Thr	Val	Ser	Ser 120
	(2)	INFO	RMAT:	ION 1	FOR S	SEQ :	ID NO	0:3:							
50	(	į)	A) Li B) Ti	NCE ( ENGTI YPE: OPOL(	H: 10	09 ar	mino cid		ds						
	(x	i) Si	EQUE	NCE I	DESC	RIPT:	ION:	SEQ	ID I	NO: 3	:				
55	Asp 1	Ile	Gln	Met	Thr 5	Gln	Ser	Pro	Ser	Ser 10	Leu	Ser	Ala	Ser	Val 15
60	Gly	Asp	Arg	Val	Thr 20	Ile	Thr	Сув	Arg	Ala 25	Ser	Gln	Asp	Val	Ser 30
	Ser	Tyr	Leu	Ala	Trp 35	Tyr	Gln	Gln	Lys	Pro 40	Gly	Lys	Ala	Pro	Lys 45

• •	Leu Leu	Ile Tyr	Ala Ala 50	Ser	Ser Le	u Glu 55	Ser	Gly	Val	Pro	Ser 60
·5 .	Arg Phe	Ser Gly	Ser Gly 65	y Ser	Gly Th	r Asp 70	Phe	Thr	Leu	Thr	Ile 75
	Ser Ser	Leu Glr	Pro Glu 80	Asp	Phe Al	a Thr 85	Tyr	Tyr	Сув	Gln	Gln 90
10	Tyr Asn	Ser Lev	Pro Tyr 95	Thr	Phe Gl	y Gln 100	Gly	Thr	Lys	Val	Glu 105
15	<u>-</u>	Arg Thr	)	TD NO							٠
20	(	EQUENCE A) LENGT B) TYPE: D) TOPOI	CHARACTI TH: 120 a amino a LOGY: lir	ERISTI amino acid near	CS: acids						
		_	DESCRIPT		-						
25	Glu Val 1	Gln Leu	ı Val Glu 5	ser :	Gly Gl	y Gly 10	Leu	Val	Gln	Pro	Gly 15
30	Gly Ser	Leu Arc	y Leu Sei 20	Сув	Ala Al	a Ser 25	Gly	Phe	Thr	Phe	Ser 30
	Asp Tyr	Ala Met	Ser Try 35	Val .	Arg Gl	n Ala 40	Pro	Gly	Lys	Gly	Leu 45
35	Glu Trp	Val Ala	Val Ile	e Ser	Glu As	n Gly 55	Gly	Tyr	Thr	Arg	Tyr 60
	Ala Asp	Ser Val	Lys Gly 65	y Arg	Phe Th	r Ile 70	Ser	Ala	Asp	Thr	Ser 75
40	Lys Asn	Thr Ala	Tyr Let 80	Gln	Met As	n Ser 85	Leu	Arg	Ala	Glu	Asp 90
45	Thr Ala	Val Tyr	Tyr Cys	s Ser	Arg Tr	p Gly 100	Gly	Asp	Gly	Phe	Tyr 105
43	Ala Met	Asp Val	Trp Gly	y Gln	Gly Th	r Leu 115	Val	Thr	Val	Ser	Ser 120
50	(2) INFO	RMATION	FOR SEQ	ID NO	:5:						
	(	A) LENGT	CHARACTI TH: 109 a	amino							
55	į	D) TOPOI	LOGY: lir	near							
	(xi) S	EQUENCE	DESCRIPT	: MOIT	SEQ ID	NO:5	:				
60	Asp Ile 1	· Val Met	Thr Gli 5	n Ser	His Ly	s Phe 10	Met	Ser	Thr	Ser	Val 15
	Gly Asp	Arg Val	Ser Ile	e Thr	Cys Ly	s Ala 25	Ser	Gln	Asp	Val	Asn 30

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	Thr	Ala	Val	Ala	Trp 35	Tyr	Gln	Gln	Гув	Pro 40	Gly	His	Ser	Pro	Lys 45
<b>5</b>	Leu	Leu	Ile	Tyr	Ser 50	Ala	Ser	Phe	Arg	Tyr 55	Thr	Gly	Val	Pro	Asp
	Arg	Phe	Thr	Gly	Asn 65	Arg	Ser	Gly	Thr	<b>Asp</b> 70	Phe	Thr	Phe	Thr	Ile 75
10	Ser	Ser	Val	Gln	Ala 80	Glu	Asp	Leu	Ala	Val 85	Tyr	Tyr	Сув	Gln	Gln 90
15		Tyr			Pro 95	Pro	Thr	Phe	Gly	Gly 100	Gly	Thr	Lys	Leu	Glu 105
		Lys	_	109											
20	• •	į)	EQUE	NCE ( ENGTI YPE:	CHARA H: 12 amin	ACTEI 20 ar	RIST: mino cid	cs:	is						
.25	(x	i) Si	•					SEQ	ID 1	10:6	:				
30	Glu 1	Val	Gln	Leu	Gln 5	Gln	Ser	Gly	Pro	Glu 10	Leu	Val	Lys	Pro	Gly 15
	Ala	Ser	Leu	Lys	Leu 20	Ser	Сув	Thr	Ala	Ser 25	Gly	Phe	Asn	Ile	Lys 30
35	Asp	Thr	Tyr	Ile	His 35	Trp	Val	Lys	Gln	Arg 40	Pro	Glu	Gln	Gly	Leu 45
	Glu	Trp	Ile	Gly	Arg 50	Ile	Tyr	Pro	Thr	Asn 55	Gly	Tyr	Thr	Arg	Tyr 60
40	Asp	Pro	Lys	Phe	Gln 65	Asp	Lys	Ala	Thr	Ile 70	Thr	Ala	Asp	Thr	Ser 75
45	Ser	Asn	Thr	Ala	Tyr 80	Leu	Gln	Val	Ser	Arg 85	Leu	Thr	Ser	Glu	Asp 90
	Thr	Ala	Val	Tyr	Tyr 95	Сув	Ser	Arg	Trp	Gly 100	Gly	Asp	Gly	Phe	Tyr 105
50	Ala	Met	Asp	Tyr	Trp 110	Gly	Gln	Gly	Ala	Ser 115	Val	Thr	Val	Ser	Ser 120
	(2)	INFO	RMAT:	ION I	FOR S	SEQ :	ID NO	):7:							
55	(	(1	A) LI B) T	engti YPE: Trani	H: 2' nuc: DEDNI	7 bas leic ESS:	ses acio sino	i							
60	/~	۰، ۱۱ ج	-					SEO	י חד	۱ <b>۵۰</b> ۰7					

TCCGATATCC AGCTGACCCA GTCTCCA 27

	(2) INFORMATION FOR SEQ ID NO:8:
*5 / \ _	<ul> <li>(i) SEQUENCE CHARACTERISTICS:</li> <li>(A) LENGTH: 31 bases</li> <li>(B) TYPE: nucleic acid</li> <li>(C) STRANDEDNESS: single</li> <li>(D) TOPOLOGY: linear</li> </ul>
10	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:
15	GTTTGATCTC CAGCTTGGTA CCHSCDCCGA A 31
	(2) INFORMATION FOR SEQ ID NO:9:
20	<ul> <li>(i) SEQUENCE CHARACTERISTICS:</li> <li>(A) LENGTH: 22 bases</li> <li>(B) TYPE: nucleic acid</li> <li>(C) STRANDEDNESS: single</li> <li>(D) TOPOLOGY: linear</li> </ul>
25	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:
30	AGGTSMARCT GCAGSAGTCW GG 22
	(2) INFORMATION FOR SEQ ID NO:10:
35	<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 34 bases</li><li>(B) TYPE: nucleic acid</li><li>(C) STRANDEDNESS: single</li><li>(D) TOPOLOGY: linear</li></ul>
40	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
45	TGAGGAGACG GTGACCGTGG TCCCTTGGCC CCAG 34